SAFETY DATA SHEET
Oxygen Generator, Chemical – EEBD/PBE

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Oxygen Generator, Chemical** **Revision**: May, 2015

Product Use: For use in **Emergency Escape Breathing Device (EEBD / SCRAM / PBE)**

Product Part Number:

Generators	802400 - 02, 03
Generator / Scrubber / Hood Assemblies	802300 - 01, 02, 04, 05, 11, 12, 14, 14-Spec,

Zodiac Oxygen Systems US (ZOSU)
225 Erie Street
Lancaster, NY 14086
Telephone 716-683-5100

CHEMTREC Emergency Telephone Numbers:

United States: 800-424-9300
International: 703-527-3887 (collect)

SECTION 2: HAZARD IDENTIFICATION

Classification of Substance: This Chemical is classified as an Oxidizing Solid.

Eye Contact: Generator and scrubber contents can burn, cause eye irritation and redness. Lithium hydroxide is very corrosive; contact can cause blurred vision, pain and severe burns.

Skin Contact: Sodium chlorate is irritating to skin. May cause rash, pain redness and severe irritation. Immediately wash skin for at least 15 minutes while removing contaminated clothing.

Ingestion: Generator contents could cause vomiting, abdominal pain, and possible liver and kidney damage. Give large amounts of water to dilute concentration. Both barium and sodium chlorate are toxic if ingested. Reported lethal doses of sodium chlorate are 2 grams for children and 15 - 30 grams for adults. Lithium hydroxide contained in the scrubber is very corrosive and could cause severe burns.

Inhalation: Dust from generator contents may cause irritation to the mucous membranes, throat and nose. Could also cause lung damage and is a possible carcinogen. Lithium hydroxide contained in the scrubber is extremely corrosive and can cause extensive damage to mucus membranes and upper respiratory tract tissue.

GHS LABEL ELEMENTS:

Oxygen Generator, Chemical
(Sodium Chlorate, Potassium Perchlorate: **oxidizers**)

Signal Word: Danger
Hazard Statement: May intensify fire; oxidizer.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Contents of Generator	CAS #	EC #	WGT %
Sodium Chlorate	7775-09-9	231-887-4	Less than 90
Barium Peroxide	1304-29-6	215-128-4	Less than 7
Iron Powder	7439-89-6	231-096-4	less than 7
Silicon Dioxide	14808-60-7	238-878-4	less than 5
Titanium Dioxide	13463-67-7	236-675-5	less than 3
Mica	12001-26-2	Not available	less than 2
Potassium Perchlorate	7778-74-7	231-912-9	less than 2
Magnesium Dioxide	1309-48-4	215-171-9	less than 0.2
Talc	14807-96-6	238-887-9	less than 0.2
Iron Oxide	1309-37-1	215-168-2	less than 0.1

Contents of Scrubber	CAS #	EC #	WGT %
Lithium Hydroxide	1310-65-2	215-183-4	--
Manganese Dioxide	1313-13-9	205-202-6	less than 70
Copper Oxide	1317-38-0	215-269-1	less than 40

Contents of Molecular Sieve	CAS #	EC #	WGT %

Silicon Dioxide	7631-86-9	231-545-4	less than 60
Aluminum Oxide (Nonfiber)	1344-28-1	215-691-6	less than 40
Sodium Oxide	1313-59-3	215-208-9	less than 20
Magnesium Oxide	1309-48-4	215-171-9	less than 5

Listed as IARC Carcinogen: silicon dioxide
Listed as NTP Carcinogen: silicon dioxide, talc, quartz
OSHA Carcinogen: none

SECTION 4: FIRST AID MEASURES

Inhalation: In the event of contact with the generator or scrubber contents, avoid breathing dust. Remove to fresh air at once. If victim is having difficulty breathing, provide oxygen and call emergency responders. If victim is not breathing give artificial respiration and call emergency responders.

Skin Contact: In the event of contact with the generator or scrubber contents, wash affected area with soap and water. Get medical attention if irritation occurs.

Eye Contact: In the event of contact with the generator or scrubber contents, flush eyes with a directed stream of water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention if irritation occurs.

Ingestion: Contact emergency responders immediately. DO NOT INDUCE VOMITING. Give large amounts of water to dilute.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: Not Applicable

Flash Point Method: Not Applicable

Flammable Limits: Not Applicable

Auto ignition Temperature: Not Applicable

Unusual Fire & Explosion Hazards: Generators contain oxidizers. Oxidizers generate their own oxygen as they burn and therefore cannot be extinguished by means other than water. Do not use CO2 or dry extinguishers as they are ineffective and may create a worse situation. Contact between the generator contents and other materials may cause fire.

Special Firefighting Procedures: Avoid bodily contact. Wear self contained breathing apparatus and wear appropriate protective equipment. Keep material from exposure to high heat by using water to cool containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

Immediately ventilate area as best as possible. Loose chemicals and components should be carefully placed into a dry metal container. Vacuuming or wet sweep may be used to avoid dust dispersal. Be sure to wear appropriate PPE while conducting clean up. If an amount spills that is too large for local clean up, call HAZMAT responders immediately.

SECTION 7: HANDLING AND STORAGE

Storage Temperature & Pressure: Store the Breathing device in a well ventilated, dry area at normal ambient temperature and pressure. Keep away from heat or ignition sources, combustibles, and other oxidizers.

General: Do not store in wet or moist environments. Keep the breathing device in manufacturer's original packaging when not in use. Practice good housekeeping techniques.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Contents of Generator	Exposure Limits	
	Regulating Agency	**Exposure Limit/Classification**
Sodium Chlorate	--	None (oxidizer)
Barium Peroxide	ACGIH	TVL 0.5 mg/m3
	OSHA	PEL 0.5 mg/m3
Iron Powder	--	None
Silicon Dioxide	ACGIH	TVL 0.025 mg/m3
	OSHA	PEL 10mg/m3 /(%SiO2 +2) (Resp)
Titanium Dioxide	ACGIH	TVL 10 mg/m3 total TWA
	OSHA	PEL 15mg/m3 total dust
Mica	ACGIH	TVL 3 mg/m3
	OSHA	PEL 20 mppcf
Potassium Perchlorate	--	None (oxidizer)
Magnesium Oxide	ACGIH	TVL 10 mg/m3
	OSHA	PEL 15 mg/m3 total dust
Talc	ACGIH	TVL 2 mg/m3
	OSHA	PEL 20 mppcf
Iron Oxide	ACGIH	TVL 5 mg/m3 fume as Fe
	OSHA	PEL 10 mg/m3 fume

Contents of Scrubber	Exposure Limits	
	Regulating Agency	**Exposure Limit/Classification**
Lithium Hydroxide	AIHA Workplace Environmental Exposure Limit	1 mg/m3 (WEEL)
Manganese Dioxide	ACGIH	TLV 0.2 mg Mn/m3 air
	OSHA	PEL 5 mg Mn/m3 air
Copper Oxide	ACGIH	TLV 1 mg Cu/m3 air
	OSHA	PEL 1 mg Cu/m3 air

Contents of Molecular Sieve	Exposure Limits	
	Regulating Agency	**Exposure Limit/Classification**
Silicon Dioxide	ACGIH	TLV 0.025 mg/m3
	OSHA	PEL 10mg/m3 /(%SiO2 +2) (Resp)
Aluminum Oxide (Nonfiber)	ACGIH	TVL 10 mg/m3
	OSHA	PEL 15 mg/m3 total dust
Sodium Oxide		None
Magnesium Oxide	ACGIH	TVL 10 mg/m3
	OSHA	PEL 15 mg/m3 total dust

Do not disassemble the generator or allow the generator to become damaged.

Personal Protection: If handling the contents of the generator:

Eye Protection: Safety glasses or goggles
Respiratory Protection: NIOSH approved air purifying filter respirator
Skin and body protection: Protective clothing
Hand protection: Impervious gloves

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: A compressed, gray, chemical core enclosed within a metal generator canister. Granular chemicals are within the scrubber.

Odor: None

Odor Threshold: Not Applicable

pH: Alkaline

Melting Point/Freezing Point: Not Applicable

Initial Boiling Point and Range: Not Applicable

Flash Point: Not Applicable

Evaporation Rate: Not Applicable

Flammability: Not Applicable

UEL: Not Applicable

LEL: Not Applicable

Vapor Pressure: Not Applicable

Vapor Density: Not Applicable

Relative Density: Not Applicable

Solubility(ies): Appreciable

Partition Coefficient: Not Applicable

A**utoignition Temperature**: Not Applicable

Decomposition Temperature: Not Applicable

SECTION 10: STABILITY AND REACTIVITY

Conditions To Avoid: Avoid storing generators with chemicals, acids, ignition sources and combustible materials. Avoid opening the generator or scrubber housing. Avoid mixing or contaminating the contents of the generator or scrubber with other chemicals, including acids, and combustible materials. Keep contents of generator and scrubber away from sources of friction and ignition sources.

Incompatibility: The contents of the generator and scrubber are incompatible with oils, organic chemicals, acids and metals including aluminum.

Hazardous Decomposition Products: Can include chlorine and chlorine dioxide.

Hazardous Polymerization: Will not occur.

Stability: Stable

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Not Applicable

Skin Corrosion/Irritation: Not Applicable

Serious Eye Damage: Not Applicable

Respiratory or Skin Sensitization: Not Applicable

Immediate Effects: Not Applicable

Delayed Effects: Not Applicable

Germ Cell Mutagenicity: Not Applicable

Carcinogenicity: Not Applicable

Reproductive Toxicity: Not Applicable

Aspiration Hazard: Not Applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not Applicable

Persistence and Degradability: Not Applicable

Bioaccumulative Potential: Not Applicable

Mobility in Soil: Not Applicable

Other adverse effects: Not Applicable

SECTION 13: DISPOSAL CONSIDERATIONS

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Generators must be spent prior to disposal. Due to barium within the generator it is considered a hazardous waste even after it is spent. The spent unit must be disposed of in accordance with all Federal, State and local regulations.
The Oxygen device also contains Lithium Hydroxide which is a class 8- Corrosive (UN2680).

SECTION 14: TRANSPORTATION INFORMATION

DOT/UN Shipping Name: Oxygen Generator, Chemical

DOT/UN Hazard Class: 5.1

DOT/UN Number: UN 3356

Packing Group: II – Medium Danger

Marine Pollutant: No

Notice: Special Shipping restrictions apply. Refer to United States Code of Federal Regulations (CFR 49) or other applicable government regulations. Government approval, exemptions or permits may be required.

SECTION 15: REGULATORY INFORMATION

This device is a chemical oxygen generator and is classified as an “Article” as defined in 29 CFR 1910.1200 (b) (6) (v) - 1 July 1995. Therefore, this device does not require a Material Safety Data Sheet. However, for Federal procurement, a MSDS is required per Federal Standard No. 313C (GSA Federal Supply Service).

SECTION 16: OTHER INFORMATION

The information contained herein is, to the best of our knowledge and belief, accurate. However, AVOX Systems Inc. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. It is the responsibility of the user to comply with all applicable Federal, State, and Local laws and regulations.

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